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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)							DATE February 2000		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604801A Aviation - Engineering Development				PROJECT DC45	
COST (In Thousands)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
DC45 Aircrew Integrated Systems - ED	11056	13439	7104	2254	2274	2561	2577	Continuing	Continuing
<p>A. <u>Mission Description and Budget Item Justification:</u> Aircrew Integrated Systems (ACIS) – Engineering Manufacturing Development (EMD) project provides engineering and manufacturing development for those systems and items of equipment which are unique and necessary for the sustainment, survivability, and performance of Army aircrews and troops on the future integrated battlefield and related training missions. The basic Air Warrior EMD programs will focus on air vehicle integration, airworthiness considerations, and user evaluation of multiple technologies to improve aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety and survivability. These funds also include work on: advanced laser protection against emerging new threat systems; product improvement of existing helmets to improve performance and increase commonality; development and adaptation of airbag technology to Army aircraft to improve crash protection and enhance aircrew survivability. Follow-on integration and test of Air Warrior program product improvement effort will continue to enhance and maximize aircrew performance in force modernized aircraft by integrating new technologies into the basic Air Warrior ensemble. Maximum advantage will be taken of simulation to reduce program technical risk through early user evaluation and to reduce program design and test cost and schedules. This project does not duplicate any aircraft platform program efforts. Both joint and service independent efforts continue to be pursued under the scope of this project.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 4643 Continued Air Warrior Engineering Manufacturing Development effort and development of technical insertion plan • 509 Continued Advanced Laser Eye Protection (Joint Service) Engineering Manufacturing Development • 4409 Initiated Helmet Mounted Display Engineering Manufacturing Development • 1495 Completed Cockpit Air Bag System (CABS) pre-production evaluation and testing <p>Total 11056</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 6086 Continue Air Warrior Engineering Manufacturing Development for basic ensemble and components design • 6725 Continue Helmet Mounted Display Engineering Manufacturing Development • 300 Continue Advanced Laser Eye Protection (Joint Service) Engineering Manufacturing Development • 328 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR) <p>Total 13439</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 7104 Continue Air Warrior Engineering Manufacturing Development effort for ensemble developmental and operational test <p>Total 7104</p>									
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B. Program Change Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	
Previous President's Budget: <u>FY 2000/2001</u> PB	11519	6312	9264	
Appropriated Value	11599	13312		
Adjustments to Appropriated Value				
a. Congressional General Reductions	-80			
b. SBIR / STTR	-292			
c. Omnibus or Other Above Threshold Reprogramming		+250		
d. Below Threshold Reprogramming	-125			
e. Rescissions	-46	-123		
Adjustments to Budget Years Since <u>FY 2000 / 2001</u> PB			-2160	
Current Budget Submit (<u>FY 2001</u> PB)	11056	13439	7104	

Change Summary Explanation: Funding - FY 2000: 300 increase to the Advanced Laser Eye Protection for Overseas Contingency Operations.
FY 2001 - Funds were moved to the CABS Aircraft Procurement, Army Appropriation in order to realign funding with current requirements.

C. Other Program Funding Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	To <u>Compl</u>	Total <u>Cost</u>
RDTE,A PE 0604801A PROJ DB45 – ACIS AD	6205	2943	0	2665	2670	2920	2912	Cont	Cont
Aircraft Procurement, Army SSN AZ3110 – ACIS	8972	17167	3490	22193	34072	56619	56535	Cont	Cont

D. Acquisition Strategy: An Air Warrior Program Definition and Risk Reduction (PDRR) development contract was awarded in FY 1997 to perform a functional requirements analysis and consider user requirements and available technologies to optimize recommended alternatives within the constraints of cost as an independent variable. The Air Warrior basic ensemble program was approved to proceed into an engineering manufacturing development system life cycle phase in 1st Quarter, FY 1999. Currently, a combined government and contractor team is developing Air Warrior improvements and integrating those components into a basic Air Warrior ensemble that will be integrated with the force modernization aircraft. Prototypes that represent the basic Air Warrior ensemble will be developed for test and evaluation. The Air Warrior aircraft platform specific nonrecurring production engineering will begin during FY 02 in preparation for basic ensemble production, aircraft integration, and fielding. Performance specifications for the joint service advanced laser eye protection program are being developed and will be used for production competition. The Cockpit Air Bag Systems (CABS) common components will be competitively procured using an approved performance specification and interface drawings (except that the initial production quantity will be procured sole-source from the developer). The CABS also requires aircraft platform specific integration nonrecurring engineering and hardware. The CABS aircraft platform specific hardware will be procured competitively. CABS will be installed via field retrofit and production line incorporation (where applicable).

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E. Schedule Profile	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Air Warrior Milestone II approved	1Qtr						
EMD for Air Warrior basic ensemble	4Qtr	4Qtr	4Qtr	4Qtr			
Development of Technical Insertion Plan	4Qtr						
Air Warrior Preliminary Design Review		3Qtr					
Critical Design Review and initial Prototype Development		4Qtr					
Air Warrior System Test (Development/Qualification)			1Qtr				
Begin Air Warrior nonrecurring production engineering integration into aircraft platforms				1Qtr			
Continuous evaluation, test, and insertion of new technologies as Air Warrior product improvements				4Qtr	4Qtr	4Qtr	4Qtr
Air Warrior basic ensemble Milestone III					1Qtr		
Production of the basic Air Warrior ensemble and aircraft platform specific integration components during FY2002 through outyears					1Qtr	4Qtr	4Qtr
Air Warrior basic ensemble IOC						1Qtr	
Production of Air Warrior ensemble product improvements as emerging technologies can be inserted during FY 2003 through outyears						4Qtr	4Qtr

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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Air Warrior	SS-CPFF	Various	465	4643	May 1999	3428	Feb 2000	3829	Jan 2000	Cont	12365	Cont
b. Adv Laser Eye Protection	C-CPFF	Aotec, Southbridge, MA	771	344	Dec 1998	300	Mar 2000			0	1415	Cont
c. Cockpit Air Bags	SS-CPFF	Simula, Inc., Phoenix, AZ	9159	860	Apr 1999						10019	Cont
d. Product Dev Integration	Fixed Rate	Various	0	0		1288	Quarterly	1218	Quarterly	Cont	2506	Cont
e. Helmet Mounted Display	SS-CPFF	Microvision, Seattle, WA	0	4177	Apr 1999	6000	Apr 2000			Cont	10177	Cont
f. Small Business Innovative Research						328					328	
Subtotal Product Development			10395	10024		11344		5047			36810	Cont
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Matrix Support	Reimbursable	Various Government		564	Quarterly	915	Quarterly	788	Quarterly	Cont	2267	Cont
Subtotal Support Costs:				564		915		788			2267	Cont
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Matrix Support	Reimbursable	Various Government		205	Quarterly	455	Quarterly	660	Quarterly	Cont	1320	Cont
Subtotal Test and Evaluation:				205		455		660			1320	Cont
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. PM Administration	Reimbursable			263		725		609		Cont	1597	Cont
Subtotal Management Services:				263		725		609			1597	Cont
Project Total Cost:			10395	11056		13439		7104			41994	Cont
Project DC45												